



The Outside, Inside

CONSTRUCTION GUIDE

21ft Wide – and – 24ft Wide

SHEEP HOUSE

Thank you for purchasing a 'Premier' Sheep House.

Please take the time to carefully read through this Construction Guide before you head out into your field and begin building your 'Premier' Sheep House.

A Sheep House is not a difficult structure to construct, but the task at hand should not be taken lightly – After all, this is a building that must stand up to extreme weather conditions year after year. This really is a two person job.

The following is a Guide to the successful construction of your Sheep House. If you follow this Guide, you will have many years of use with very little or no maintenance. Please use the Checklist supplied with your order, together with this Guide, to help you identify the different parts of your Sheep House.

To help you identify the different steel tubes, the item codes on the Checklist relate to the diameter and length of tube and how the ends are formed, eg; **"38/1810PP"** is a 38mm diameter steel tube, 1810mm long, with plain ends.

"PS" at the end of the code would indicate the tube had one end plain and one end swaged.

"FP" would indicate the tube had one flattened and punched end and one end plain.

"FS" would indicate the tube had one flattened and punched end and one end swaged.

"FF" would indicate that both ends are flattened and punched.

"A" would indicate that the flattened ends are offset (at an angle) to each other.

If you are unsure or confused about any aspect of construction, please contact us via e-mail at info@premierpolytunnels.co.uk or by telephone on 01282 811250.

Premier Polytunnels are proud to be the **ONLY** polytunnel supplier to offer an out of hours Construction Advice Service, available until 9pm, 7 days a week.

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TOOLS REQUIRED

*****WARNING: PRODUCTS MAY CONTAIN SHARP EDGES.
ALWAYS WEAR GLOVES*****

Here is a list of tools required to complete the construction of your polytunnel:

Tape measure	Spade	Large hammer	Claw hammer
Spirit level	2x 13mm spanner	Marker pen	Battery drill
9mm drill bit	5mm drill bit	Wood saw	
String line	Sharp knife	Timber drift (small offcut of timber)	
Large step ladders/Platform			

INTRODUCTION

“Picture this....”

Below is a simple outline of what you should end up with once you have completed your project and is something to bear in mind while constructing your Sheep House.

A Sheep House is a series of hoops placed in line on **Foundation Tubes** or **Base Plates**.

A **Ridge** tube is suspended under the hoops at the centre point and runs the full length of the Sheep House.

Two additional **Side Ridges** are suspended under the hoops where the outer leg of the hoop joins the inner hoop.

Four diagonal tubular **Stabilisers** are placed one at each corner.

Two diagonal **Roof Stabilisers** are placed at each end to brace the roof of the Sheep House.

A timber **End Frame** with a 12ft opening is fixed central at each end.

Base Rails are placed around the frame at ground level.

Side Rails are placed around the frame 1m above the base rail.

Ventilation net is placed between the base and side rails

Polythene is placed over the framework and fixed around the End Frame. The polythene cover is then fixed to the **Side Rails**.

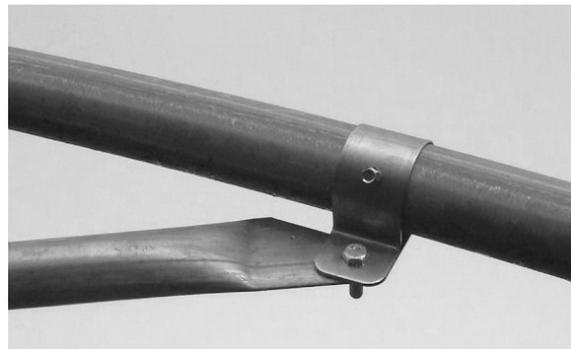
USE OF 'P' CLIPS

The image below demonstrates the **double 'P' Clip** method used to fix the Triple Ridge.



The following images show how a Corner Stabiliser or any tube flattened and punched at the end attaches to a 'P' Clip.

NOTE: 'P' Clips should always be placed around a hoop so that the leg of the P is to the inside of the polytunnel – That is to say, as far away from the polythene cover as possible.



*****PLEASE NOTE: When assembling your polytunnel, no screws, bolts, ends of tubes, etc, should protrude beyond the hoops as these will cause damage to your cover*****

SITE

Your construction site should be clear and reasonably level from side to side. Approximately 6 inch out of level across the width of the tunnel can be taken up by adjusting the Foundation Tubes of your Sheep House (**Fig1**).

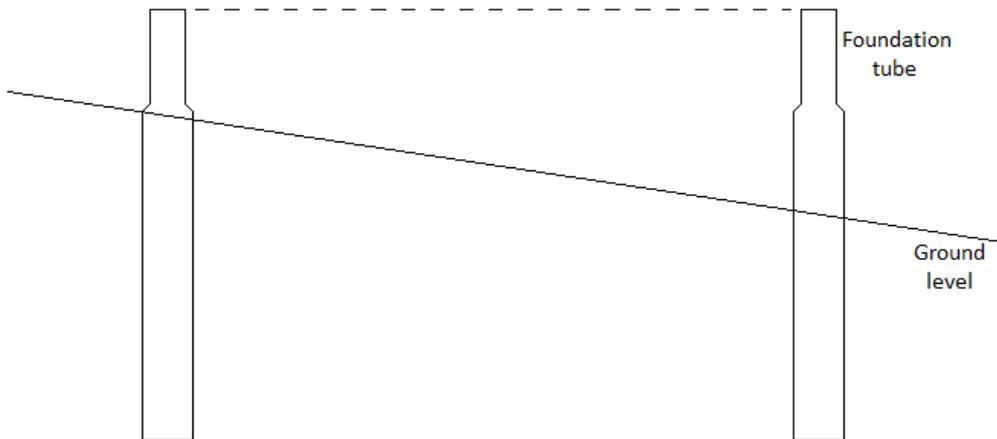


Fig1

A slope down the length of the structure does not have to be taken into account as your Sheep House can be built straight onto this slope with the framework placed at the vertical (**Fig2**).

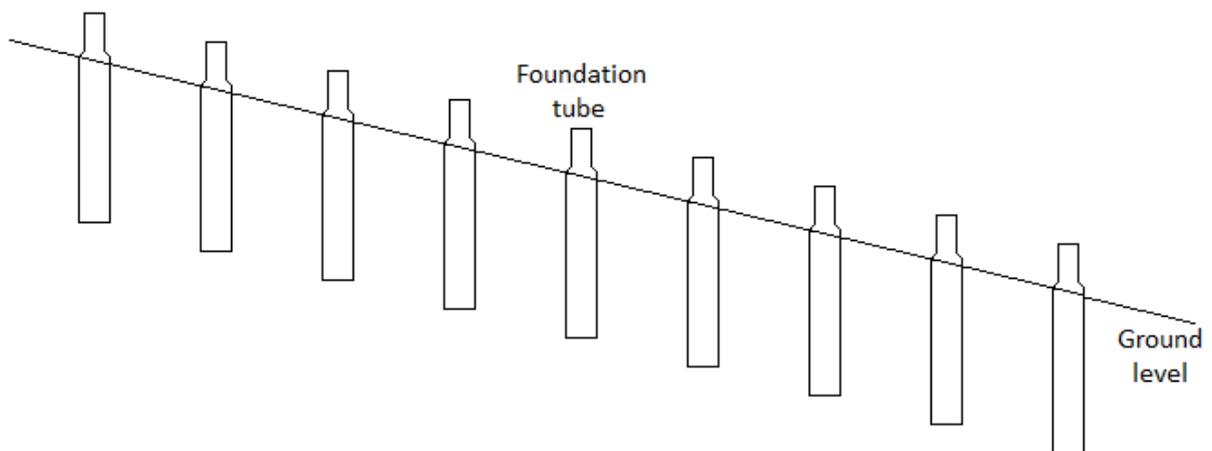


Fig2

FOUNDATION TUBES AND ANCHOR PLATES

*****IMPORTANT – Protect the ends of tubes from damage when driving them into place by using a timber drift (a small offcut of timber)*****

All measurements are taken from the centre of the Foundation Tubes.

Foundation Tubes are concreted into the ground at each end of each hoop.

Choose a corner of your Sheep House to be a fixed point from which all measurements will be taken and mark the point with a peg or paint (it is advised that this fixed point is the highest corner of the structure on any sloping site).

Measure the length of your chosen Sheep House and mark this point. (All measurements are to the centre of the tube). Mark out the remaining corners. The measurements for these will be the width and length of your Sheep House.

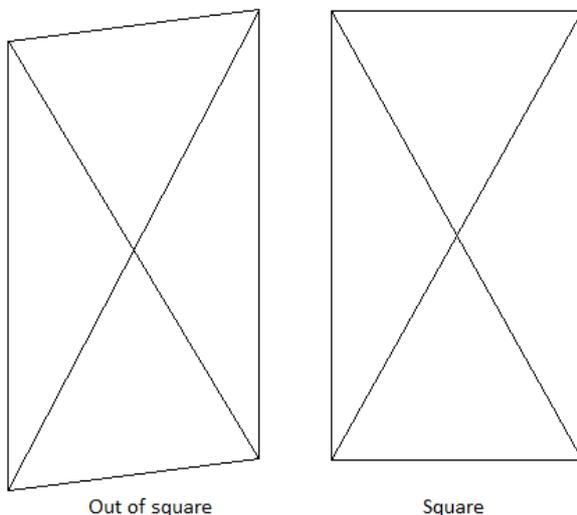


Fig3

To check for square, measure from corner to corner (**Fig 3**) – This measurement should be the same, but if not, simply adjust the marks until correct.

Mark out the position for the remaining holes down the length at 6ft spacing.

Dig a hole 20 inches square x 16 inches deep at all of the marked points (**Fig4**).

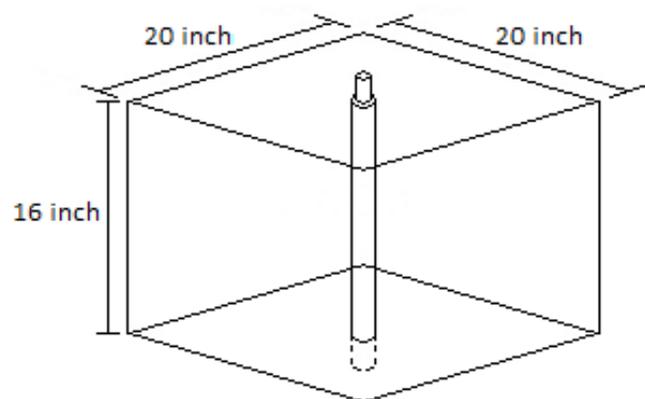


Fig4

At the previously mentioned fixed point drive a Foundation Tube into the bottom of the hole until just the swaged end is left above ground level (**Fig5**).

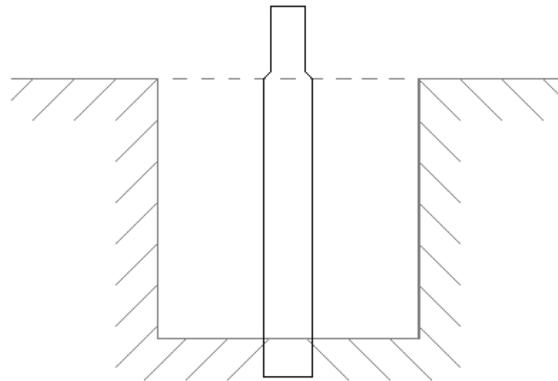
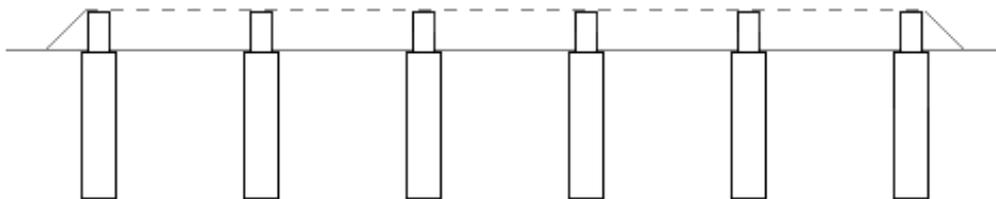


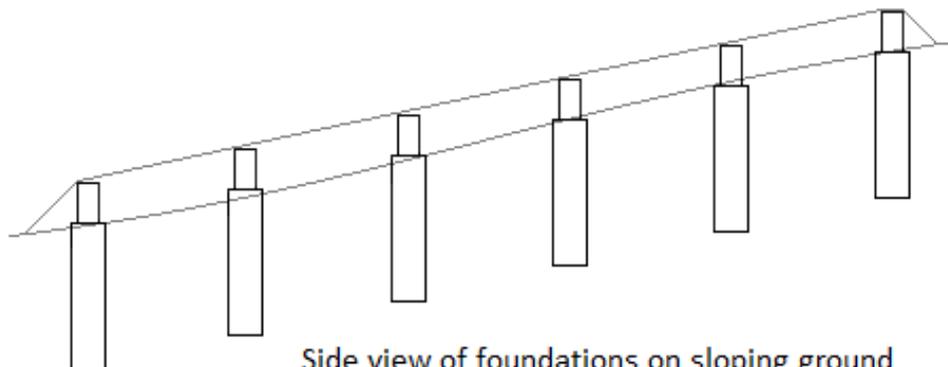
Fig5

Set the three other corner Foundation Tubes, making sure all measurements are correct, checking for square and checking that they are level across the width.

Drive in the rest of the Foundation Tubes at 6ft spacings along the length, using a string line to check the tops of the tubes are at the right level and are inline.



Side view of foundations on level ground



Side view of foundations on sloping ground

Now all the foundations are knocked in, place an anchor plate clamp (**Fig6**) around the each of the foundation tubes at the bottom of the holes (**Fig7**).



Fig6



Fig7

Slide an anchor plate over the tubes to rest on the clamps and tighten another clamp on top of the plates to hold in position (**Fig8**).

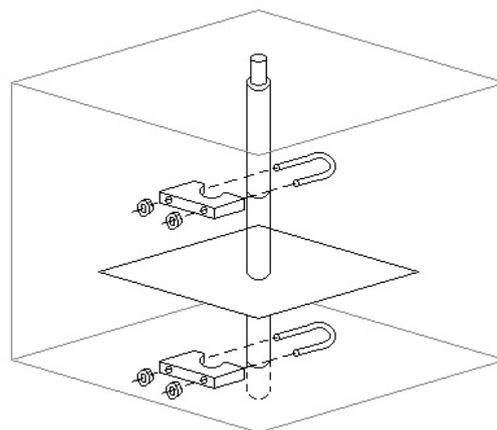


Fig8

Place the soil back in the holes and heel down flat with the ground level (**Fig9**). Re-check all measurements.



Fig9

BASE PLATES

Tools required:	
Hammer drill	14mm masonry bit
16mm masonry bit	17mm spanner or socket

If you are placing your sheep house on a concrete base you will require Base Plates (**Fig10**) which replace Foundation Tubes.

Please use the same method of measuring as for Foundation Tubes.



Fig10

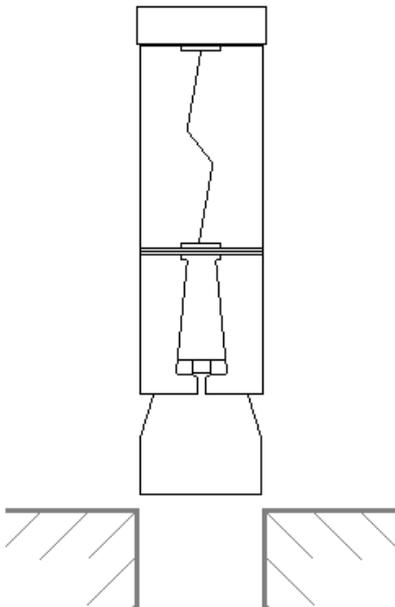


Fig11

When securing Base Plates to the ground, drill three 16mm holes (80mm deep minimum) into the footing through the three Base Plate holes.

Insert the loose bolt sleeves into the holes until flush with the ground. Please make sure to insert the sprung end of the sleeve first (**Fig11**).

Bolt the Base Plates onto the ground by tightening the loose bolts through the holes on the Base Plates and into the sleeves.

End Frame posts are secured at the base with an Angle Bracket (**Fig12**).

These require a 14mm hole to be drilled into the footing (70mm deep minimum). Bolt these brackets down as you would Base Plates but with only one loose bolt.

The End Frame posts then bolt to this bracket using the bolt supplied with the Base Rails.



Fig12

HOOPS

Hoops come in four sections – two outer legs and two inner hoops. These sections should be slotted together on a flat base and the joints held together using a self drill screw located approximately 40mm away from the joint (**Fig13**).



Fig13



Self Drill Screw

Lift the hoops into position on the foundations. The swaged half of the inner hoop should be kept to the same side of the structure (left side or right side). Make sure the screws on the end hoops face the inside of the Sheep House (**Fig14**).



Fig14

*****Please note: Self drill screws should be held in the nut driver provided or can be held directly into a drill chuck. They will drill their own hole and tap themselves into position. Do not over-tighten*****

TRIPLE RIDGE KIT

The centre Ridge bar is supplied in 6ft sections. One ridge starter with plain ends and one or more ridge extensions with one swaged end.

Place a 'P' Clip around the top centre of each hoop. The central joint can be used as a guide.

On the end hoops the leg of the P should be to the inside edge of the hoop and should face down the length of the Sheep House.

Place a 'P' Clip around one end of the ridge starter. Bolt this ridge starter up to the 'P' Clip on one of the end hoops (**Fig15**).

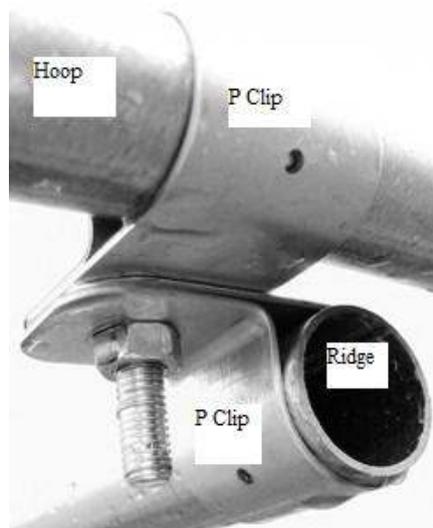


Fig15

Adjust the ridge starter until the end is located half way through the end hoop (**Fig16**).

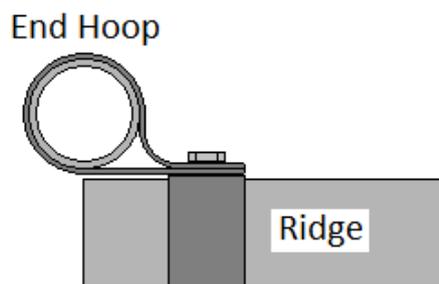


Fig16

With the ridge starter suspended from the hoop slide a ridge extension into the starter. Place a 'P' Clip around the ridge starter/extension wherever it crosses a hoop and bolt up to the 'P' Clip on the hoop. Do not tighten this bolt and nut until a later stage.

Keep adding ridge extensions and 'P' Clips whenever they cross a hoop until you reach the opposite end of the Sheep House. Bolting them up but not tightening.

Once the full centre Ridge has been suspended loosely, measure the spacings for the hoops using the end with the ridge starter as the starting point. Adjust the 'P' Clips along the Ridge until all the hoops are at 6ft spacings (**Fig17**).

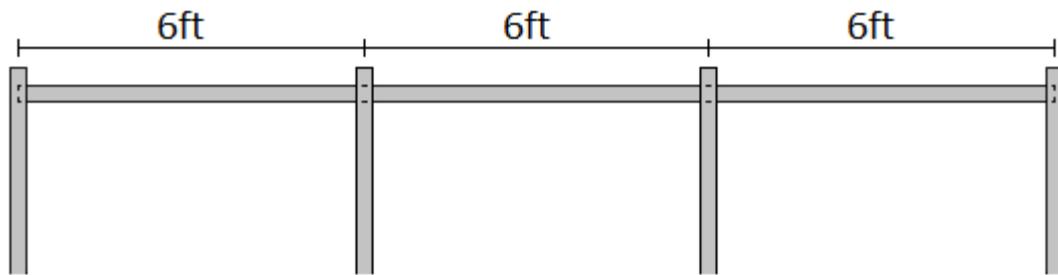


Fig17

Adjust the 'P' Clips on the hoops so that the Ridge runs in a straight line down the length, as close to centre as possible. Once happy with the positions, tighten all the bolts and nuts and secure the 'P' Clips onto the Ridge and the hoops using self drill screws.

Secure the ridge sections together using self drill screws located approximately 2cm away from the joins.

Fit a plastic end cap in each end of the Ridge.



Completed centre ridge.

Triple Ridge Kits: These side Ridge bars are identical to the centre Ridge and should be assembled using the same method. These side Ridges should be located close to where the outer legs meet the inner hoop.

CORNER STABILISERS

These tubes are placed to form a triangle at each corner of the Sheep House (**Fig18**).

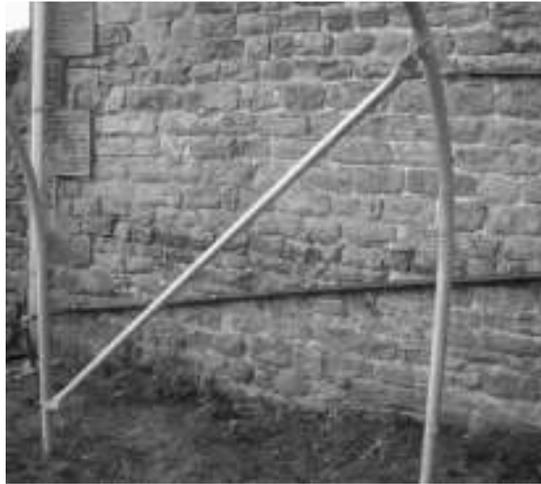
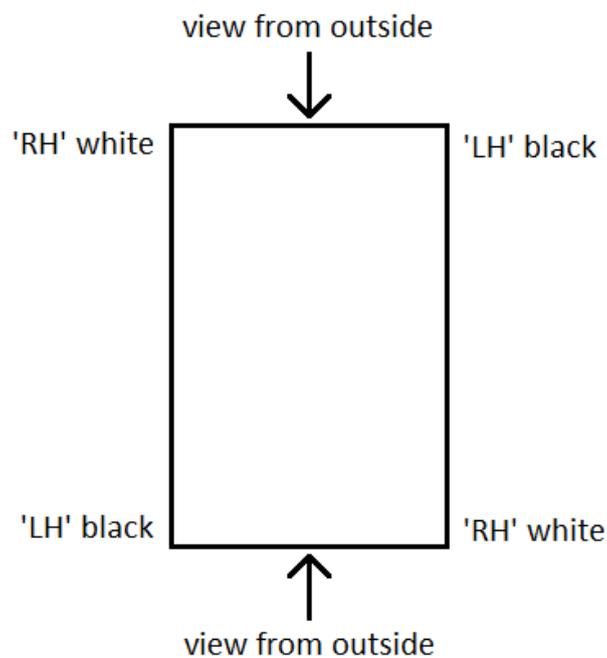


Fig18

Stabilisers are right and left handed for opposite corners of the Sheep House and have their flat ends offset to accommodate the curve of the end hoop – The 'RH' pair are painted WHITE at the end and the 'LH' pair are painted BLACK to differentiate between them.

Note: Right and left hand should be viewed from the outside of the Sheep House looking at the end.



Place a 'P' Clip around the second to end hoop with the leg of the P towards the inside edge of the hoop and pointing towards the end hoop. This 'P' Clip should be located 9 inches up from the ground. Bolt one end of a Corner Stabiliser to this 'P' Clip but do not tighten (**Fig19**).

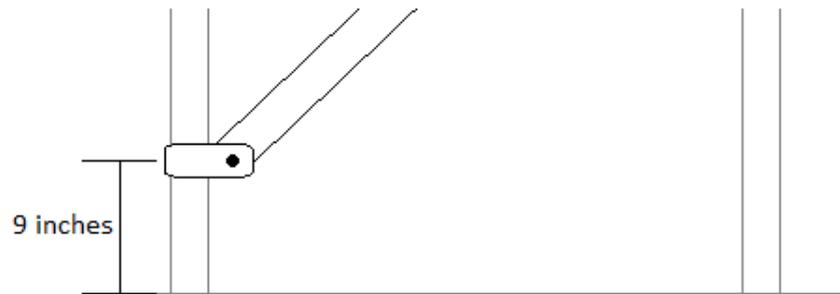


Fig19

Place a 'P' Clip around the end hoop, again with the leg towards the inside edge and pointing towards the second hoop. Bolt the Corner Stabiliser to this 'P' Clip but do not tighten.

Check the 'P' Clip on the second to end hoop is still located 9 inches up from ground level, if it has moved then simply slide the clip up or down the hoop until back in position. Tighten this 'P' Clip and secure with a self drill screw making sure the head of the screw does not protrude past the hoop.

Using a spirit level to check the end hoop for vertical, slide the 'P' Clip up or down the hoop until in the correct position. Tighten and secure the 'P' Clip using a self drill screw making sure the head of the screw does not protrude past the hoop (**Fig20**).

The predrilled holes in the 'P' Clip may not be in a suitable location for the self drill screw, but the screw will make its own hole in a place suitably clear of the Polythene.



Fig20

Repeat this process at each corner of the Sheep House.

ROOF STABILISERS

Roof Stabilisers attach to the second to end hoop using 'P' Clips located approximately 12 inches either side of the centre Ridge (**Fig21**).

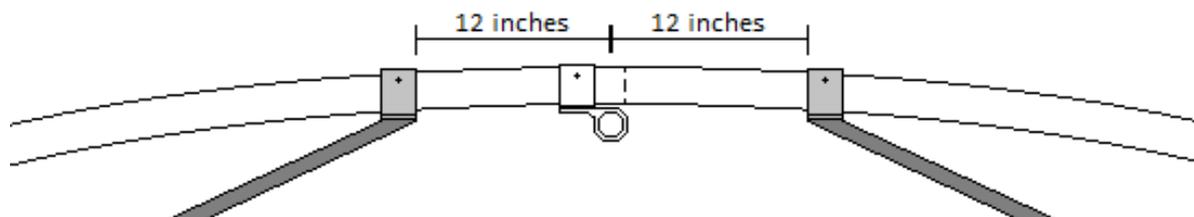


Fig21

Place another two 'P' Clips on the end hoop, one each side of the centre Ridge. Bolt the Roof Stabiliser to these 'P' Clips but do not tighten.

Secure the 'P' Clips to the second to end hoop with a self drill screw, making sure the head of the screw does not protrude outside of the Sheep House.

You will find that the Roof Stabilisers angle down to the end hoop (**Fig22**).

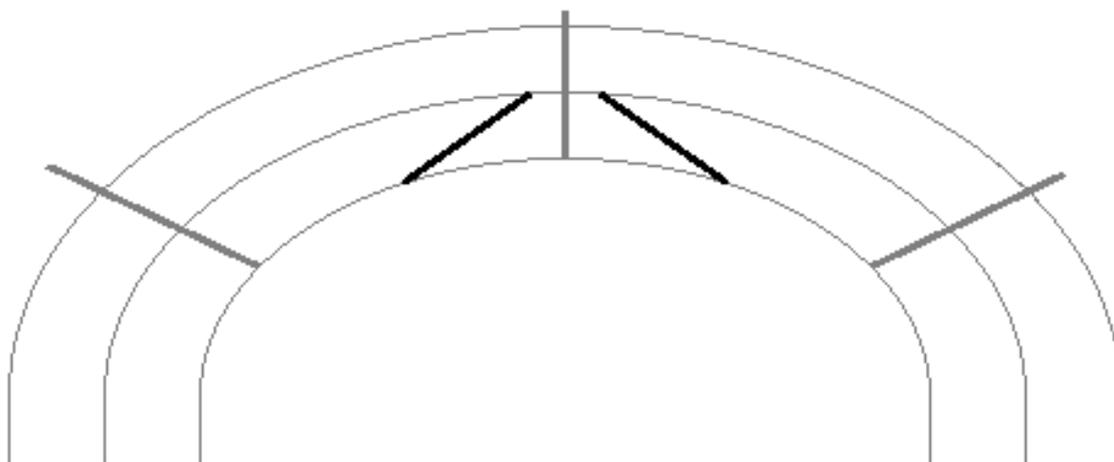


Fig22

If the end hoop bows in or out of the Sheep House, adjust the 'P' Clips along the hoop until it runs flat. Tighten and secure the 'P' Clips with a self drill screw, making sure the head of the screw does not protrude outside of the Sheep House.

END FRAME

4 inch x 2 inch timber is used for the End Frames. The 4 inch face of all the timbers, which make up the End Frame, should face outwards.

Place a string line across the outside of the end hoop just above ground level; this will act as a guide to keep the End Frame in line with the hoop at the base.

Lay the 3.6m long length of 4 inch x 2 inch timber along the ground and centralise it between the end hoop legs. Make a note of the measurement from the leg of the hoop to the end of the lintel (approximately 1380mm on 21ft wide/1840mm on 24ft wide).

At each end of the lintel dig a hole, a minimum of 12 inches deep. Hold a 3.6m length of timber vertical with one end placed in the hole (with the 4 inch face of the timber facing outwards). Check that the measurement you noted earlier is maintained from the hoop leg to the **INSIDE** edge of this post. Check the timber for vertical and mark under the hoop – cut the timber on this mark.

Re-set the timber post in the hole and using a 'P' Clip – with the leg of the P down the back of the post – bolt in position but do not tighten. Back fill the hole keeping the post vertical and in line with the end hoop (**Fig23**).

*****Please note: When placing the Sheep House on a hard base, Angle Brackets should be used to secure the bottom of the posts (see Fig12 on page 9)*****

Double check the post for vertical and adjust the 'P' Clip along the hoop if necessary before securing to the hoop with a self drill screw.

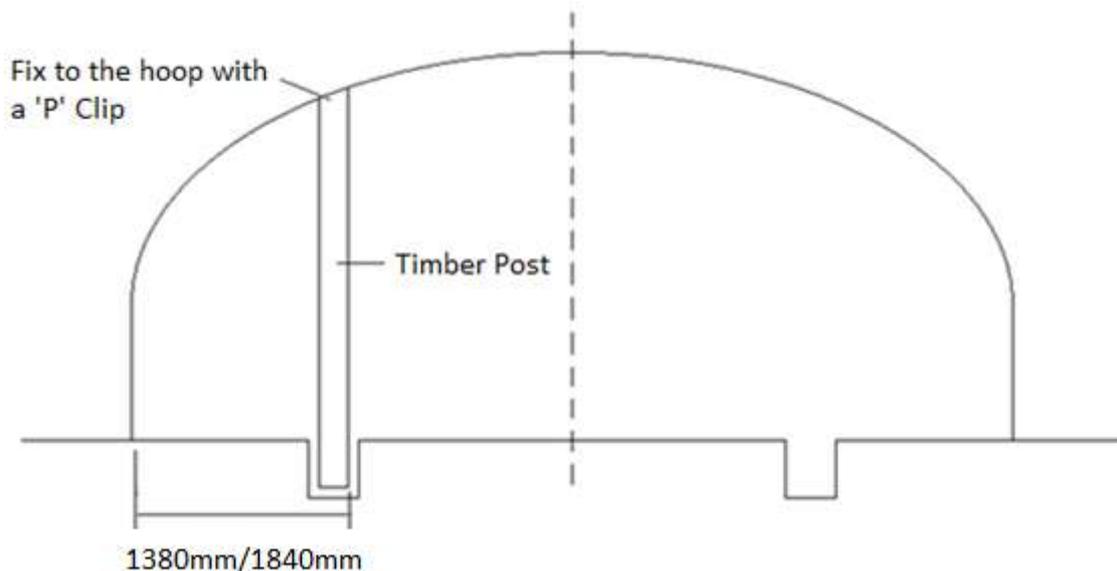


Fig23

Your first post is now in position from which the rest of the End Frame is constructed. Repeat the previous operation with the second post but leave it hanging loose in the hole with the 'P' Clip unsecured (**Fig24**).

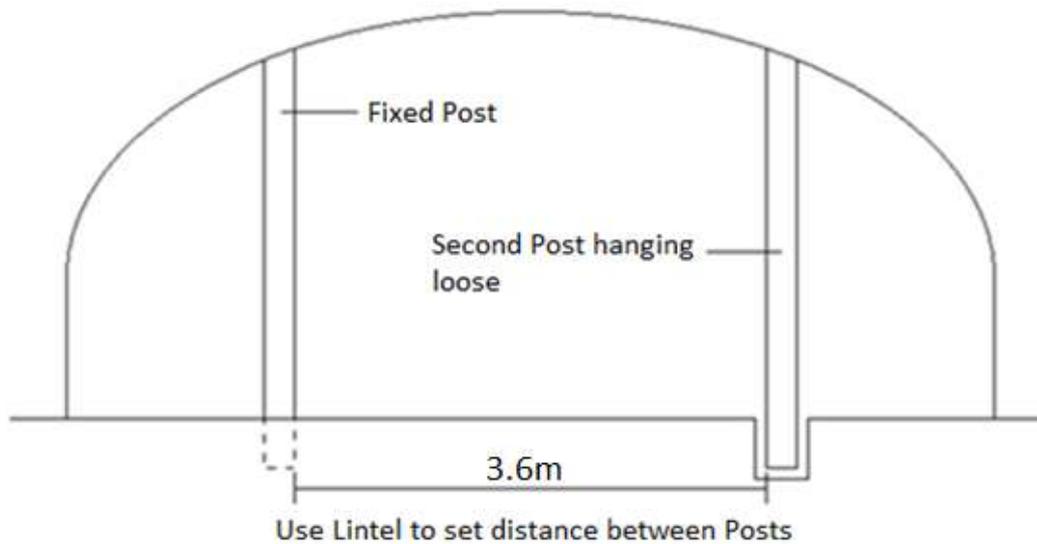


Fig24

Using the 3.6m long timber lintel as a gauge, place this between the posts at the base. Adjust the loose post into position touching the gauge and in line with the end hoop. Back fill the hole.

The timber lintel is now lifted to your desired height between the posts.

Drill a 5-7mm hole through the side of the fixed post in line with the centre of the lintel. Drive a 6 inch nail through the pre-drilled hole and into the end of the lintel.

Using a spirit level, keep the lintel level horizontally between the two posts. Adjust the loose second post along the hoop until tight up to the lintel. Drill a 5mm hole through the post and drive a 6 inch nail through the post and into the lintel (checking at all times that the lintel is level horizontally). Tighten and secure the 'P' Clip on the loose post and place a nail plate over each side of each joint **(Fig25)**.

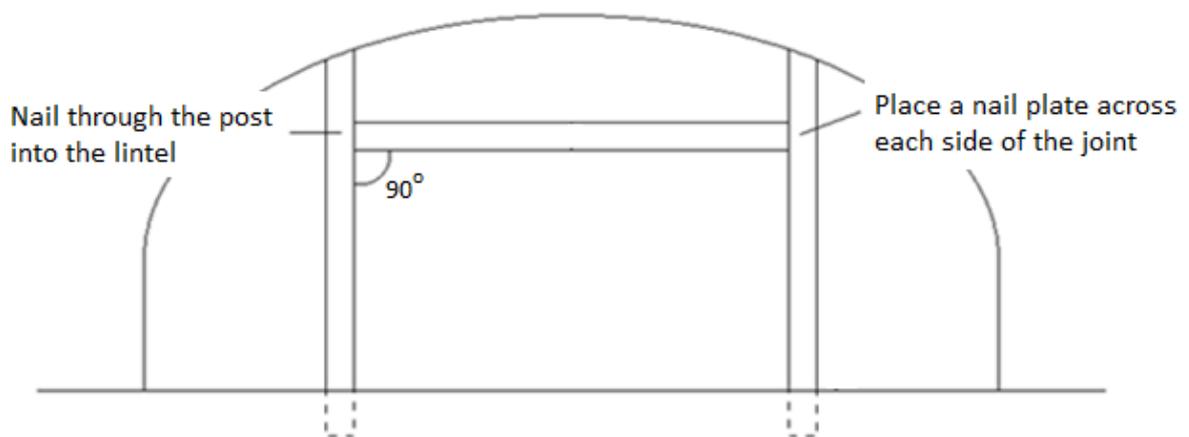


Fig25

A Lintel Stabiliser angles down from the centre Ridge to the centre of the lintel (**Fig26**).

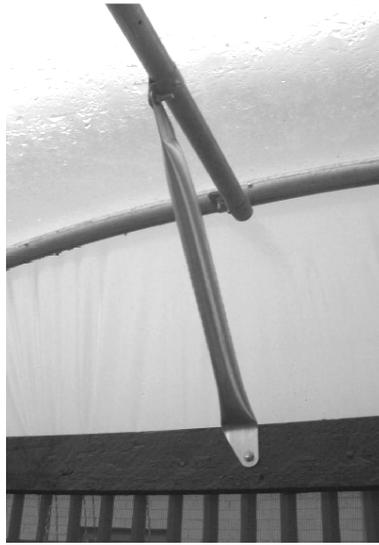


Fig26

Place a 'P' Clip around the centre Ridge and loosely bolt the Lintel Stabiliser to it. Slide the 'P' Clip along the Ridge until the angled end of the Stabiliser meets the lintel. Drill a 9mm hole through the hole on the Stabiliser and the timber lintel. Bolt the Stabiliser to the lintel with an M8 x 75 cup square bolt through the drilled hole (**Fig27**).

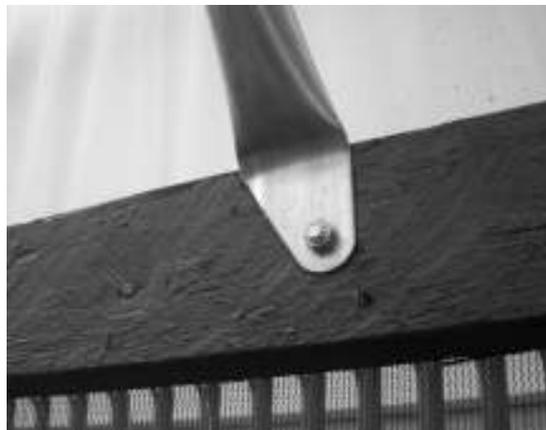


Fig27

Adjust the 'P' Clip along the Ridge until the lintel doesn't bow in or out of the polytunnel. Tighten and secure the 'P' Clip with a self drill screw.

Repeat this process at the opposite end of the Sheep House.

TIMBER BASE RAILS

3 inch x 1.5 inch timber is used for the timber base rails.

This timber rail goes around the outside of the Sheep House framework at ground level and finishes at the End Frame posts (**Fig28**).

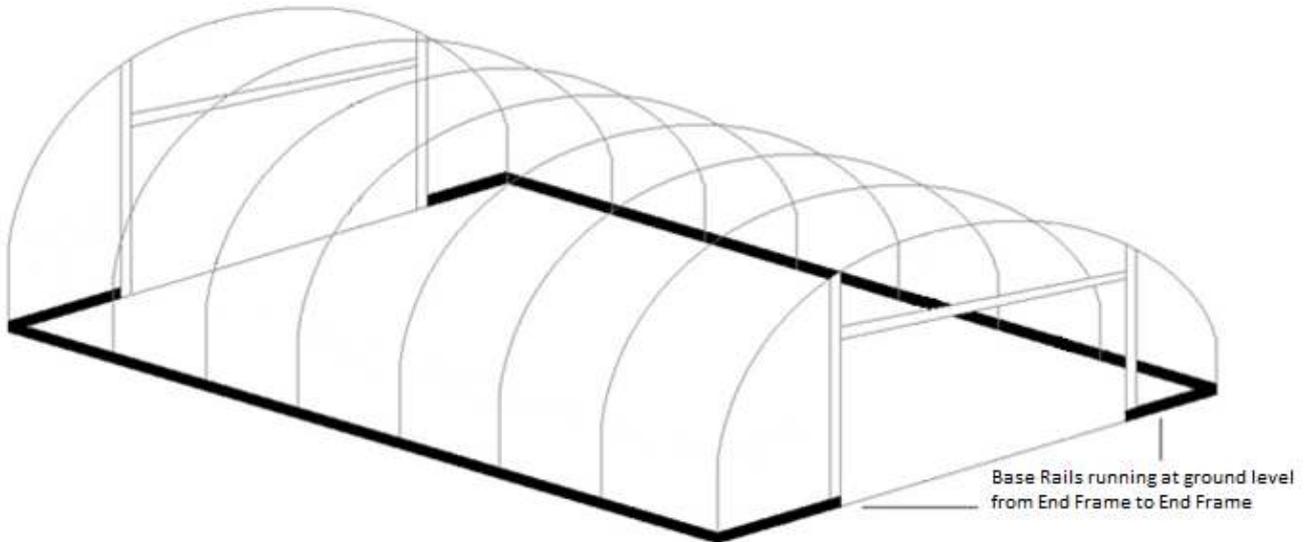


Fig28

The rails are supplied in standard lengths and depending on the length of the Sheep House short sections will require a join. To make the best use of the timber and avoid too many small joins one of the end timbers should be fixed in place first – This timber should be bolted to the outside face of an End Frame post at ground level.

Drill a 9mm hole through the end timber and the End Frame post and bolt in place with a 100mm cup square bolt with a washer under the nut on the inside (**Fig29**).

If the Sheep House is being placed onto hard standing then drill the 9mm hole through the angle bracket on the inside of the End Frame post and through the end timber. The 100mm bolt then fixes the end timber, the post and the angle bracket together.



Fig29

Place a corner bracket around the hoop approximately 1 - 2 inches above the ground (**Fig30**). Bolt the end timber to the corner bracket and cut off the excess timber, leaving it overhanging the hoop by 3 inches.

Take this off cut timber and join it to another full length of timber end to end and in line using a nail plate on the inside of the joint (**Fig31**). This extended rail is then the start of the side timbers which run the full length of the Sheep House at ground level.



Fig30



Fig31

Butt this side timber up to the overhang on the previously fixed end timber. Bolt the side timber to the corner bracket (**Fig32**).

Hammer a 4 inch nail through the end timber and into the end of the side timber. Cut off the small overhang.

Where a side timber crosses an intermediate hoop a “saddle clamp” is used to fix the timber to the hoop (**Fig33**).

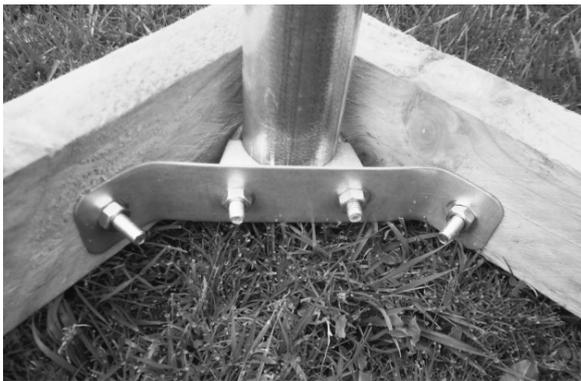


Fig32

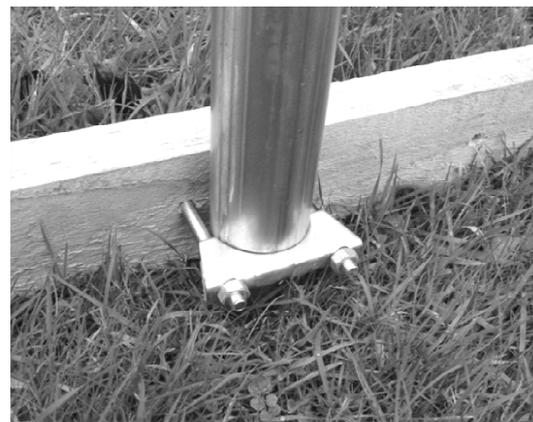


Fig33

Continue adding lengths of timber all the way down the side of the Sheep House using nail plates to join them together.

If the overhang at the end isn't sufficient to complete the second end timber, cut another full length of timber to fit or join two shorter lengths together.

Repeat this process on the other side of the Sheep House.

TIMBER SIDE RAILS AND VENTILATION NET

Timber Side Rails are identical to timber Base Rails and should be fixed using the same method (see 'Timber Base Rail' section on page 19) but placed **1m** from the ground on the straight side of the Sheep House leg (**Fig34**).

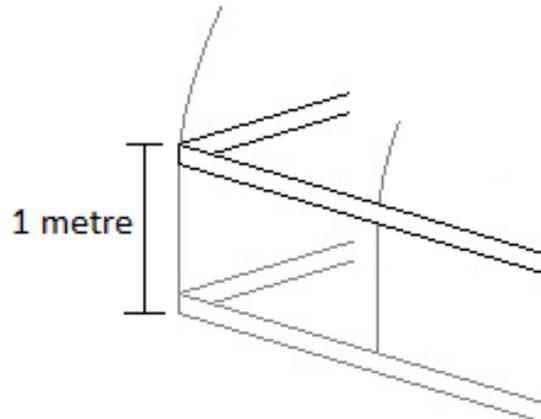


Fig34

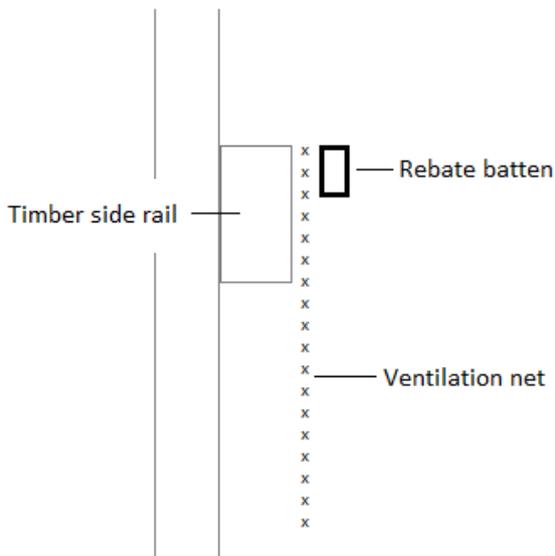


Fig35

The Ventilation Net should be trapped between the timber Side Rail and the rebate batten, along the top edge of the Side Rail (leaving some excess at each end) from post to post (**Fig35**).

Once you have formed the rebate all the way around from post to post it is necessary to cut off (at an angle) any rebate that protrudes at the corners (**Fig36**).



Fig36

FORMING A REBATE FOR THE END FRAME

In order to fix the cover around the End Frame and give it the necessary strength to remain held in position under extreme weather, it is trapped in a rebate which must be formed around the outside edge of the End Frame with 19mm x 38mm battens (**Fig37**). These battens should be cut and nailed across the lintel and down the posts to the Side Rail.

Position the battens to the outside edge of the End Frame timbers and keep the nails spaced 9 inches apart.

The cover then comes over this batten and is trapped in place by another batten nailed to the End Frame up against the first batten.

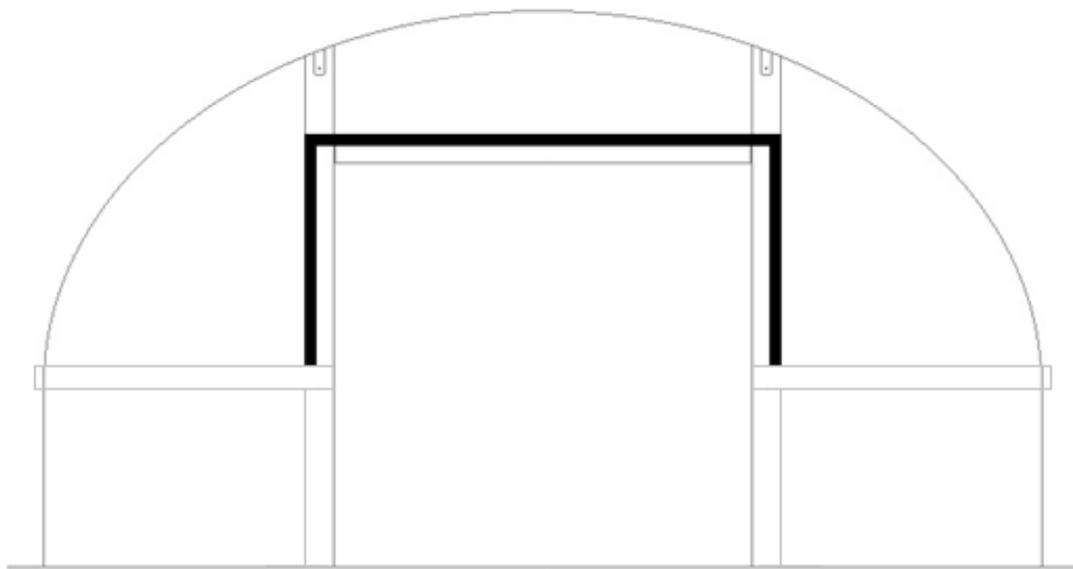


Fig37

FINAL FIX

Check the structure all around for alignment and positioning of all the bars. If you are happy, all joints and 'P' Clips can now be secured with a self drill screw (**Fig38**). In some cases this may be a combined fix of both joint and 'P' Clip. These screws are held in the nut driver provided and, in the case of the 'P' Clips, use one of the two small holes as a starter point for the screw (**Fig39**). Keep all screws to the inside of the Sheep House, away from where the Polythene cover may rub.

*****It is MOST IMPORTANT that the hoops are screwed to the foundations at this stage*****



Fig38



Fig39

ANTI HOT SPOT TAPE

This is a self adhesive foam tape which is placed over each hoop from the Side Rail on one side, to the Side Rail on the opposite side. Anti Hot Spot Tape should be used just prior to covering your Sheep House.

On all of the hoops the Anti Hot Spot Tape runs over the centre of the hoop (**Fig40**). On the end hoops an extra length of tape should be placed on the front face in order to protect the Polythene cover as it stretches around the hoop to the End Frame (**Fig41**).



Fig40



Fig41

COVERING THE SHEEP HOUSE

TOP TIP: Nail any battens up prior to covering the Sheep House (6 inch spacings) as this will speed up the job of getting the cover secure before any gusts of wind arise. **Don't allow the point of the nails to protrude through the batten.**

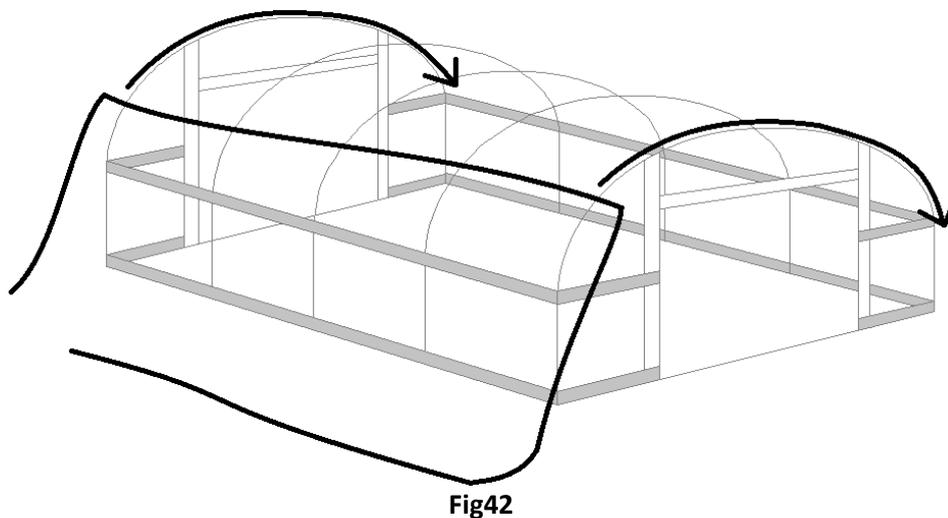
On both sides of the Sheep House, loosen the clamps holding the Side Rail to the hoops. Raise the rails by 2 - 3 inches and retighten the clamps.

Roll the cover out along the side of the structure after checking and clearing the ground of sharp objects.

ONLY ROLL OUT YOUR COVER ON A CALM DAY AS YOU ARE EFFECTIVELY OPENING A LARGE SAIL.

The Black/White Polythene must be placed with the White side facing inside the Sheep House.

With one person at each end, hold the edge of the sheet which, when pulled over the framework, will ensure the correct side of the Polythene is on the inside. Stretch the sheet tight along the length of the Sheep House and walk to the opposite side, taking the sheet over the framework and being careful not to snag the sheet on any protrusions (**Fig42**).



The Polythene is very strong and resistant to tearing so don't be afraid to pull it as hard as you can, but it is advisable to grip the Polythene only around the edges as in the event of damage this area will be trimmed off.

Centralise the sheet along the width and length of the structure – You will find that the sheet will not reach to the ground at the ends, but this is correct and there is no need to worry (**Fig43**).



Fig43

- **STEP 1:** Cut two 19mm x 38mm battens to fit across the top of the End Frame between the rebate battens. Starting at one end of the Sheep House, trap the Polythene with these battens pressed tight up to the rebate batten. The Polythene should be smoothed out 4 inches either side of the lintel centre and the batten nailed in place along this 8 inch length only for the time being (**Fig44**).



Fig44

At the opposite end the same method of fixing should be used, but this time the Polythene should be pulled along the length of the Sheep House as tight as possible before nailing the batten in position.

- **STEP 2:** Tension the Polythene down to the Side Rail on one side, starting in the middle. This is best done with one person at a hoop either side of centre. Do not over tension, but when the cover is smooth from the centre Ridge down to the Side Rail batten the cover to the rail tight up to the rebate. Using this method, work your way out to the ends. Repeat this on the second side but this time get as much tension as possible into the cover (**Fig 45**).

*****Make sure to pull the cover along the length of the structure as well as down to the Side Rail, this will mean the cover will not dip between the hoops too much*****



Fig45

- **STEP 3:** With just the four corners and the End Frames left, it will now be necessary to cut the Polythene at the corners, but **ONLY** below the Side Rails, to allow the cover to come smoothly around the ends (**Fig46**). It is important that the cover is cut in line with the end of the Sheep House, **NOT** the length.

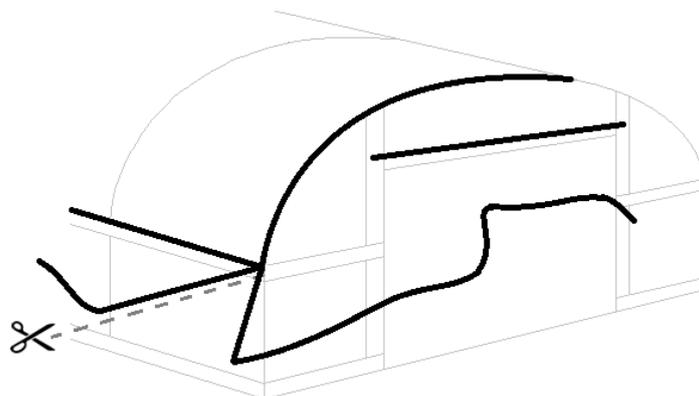


Fig46

- **STEP 3:** Starting at the lintel centre, grip the Polythene and, while pulling tightly, twist the wrist to create a selection of pleats working out to the End Frame posts, nailing the batten as you go (**Fig47**). Repeat this same method down each post (**Fig48**).



Fig47



Fig48

You should have run out of pleats by the time you reach the Side Rails.
Tension the cover down to the Side Rails at each corner and fix with a batten (**Fig49**).



Fig49

- **STEP 4:** Loosen the clamps holding the Side Rails to the hoops and push them back down to their original position. Retighten the clamps.

Trim off the excess Polythene around the outside of the Sheep House (**Fig50**).



Fig50

- **STEP 5:** Tension the Ventilation Net down to the Base Rail (**Fig51**) and batten in place (**Fig52**).



Fig51

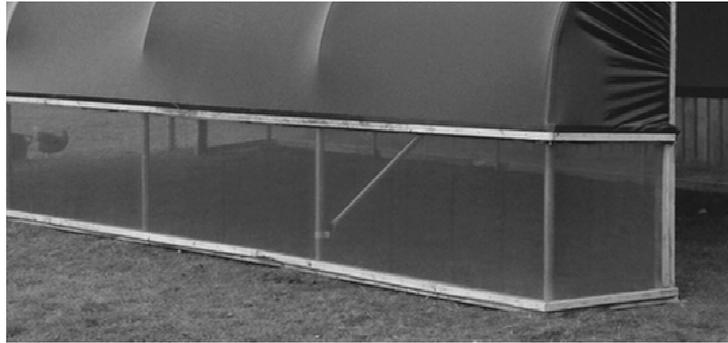


Fig52

Finally tension the net out to the End Frame posts, and batten in place (**Fig53**).



Fig53

Well done! You are now ready to begin using your 'Premier' Sheep House!

NOTE: THIS STRUCTURE IS FOR PROTECTION ONLY AND IN ORDER TO AVOID ANIMALS CAUSING DAMAGE, PENS OR FENCING SHOULD BE PLACED ACCORDINGLY TO KEEP ANIMALS FROM COMING INTO CONTACT WITH THE STRUCTURE.

May we take this opportunity to wish you good luck with all your ventures.